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Collaboration and Supply Chain Integration using STEP and XML

This presentation discusses the use of STEP (ISO 10303) standards for product data in conjunction with XML (eXstensible Markup Language) and the World Wide Web to address design collaboration and supply chain integration for manufacturing enterprises.

Presented by David Briggs

David Briggs is an Associate Technical Fellow in the Information Systems division of the Boeing Commercial Airplane Group with over 20 years of experience in developing and implementing product data exchange technologies. Recently, he was the project leader for the AEROSTEP project which proved the use of STEP for the exchange of solid model assemblies. In his role as Chief Engineer of the PDES Inc. consortium, he is involved in several projects in the area of XML and Engineering Analysis.

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Collaboration and Supply Chain Integration using STEP and XML

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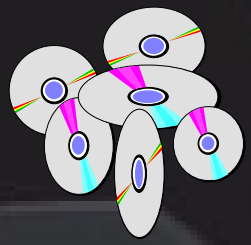
Today's Business Environment



LONG TERM
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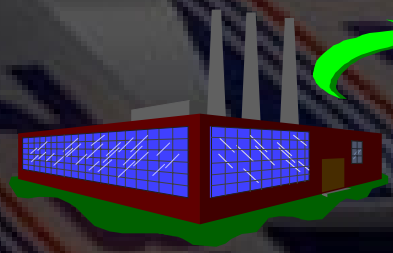

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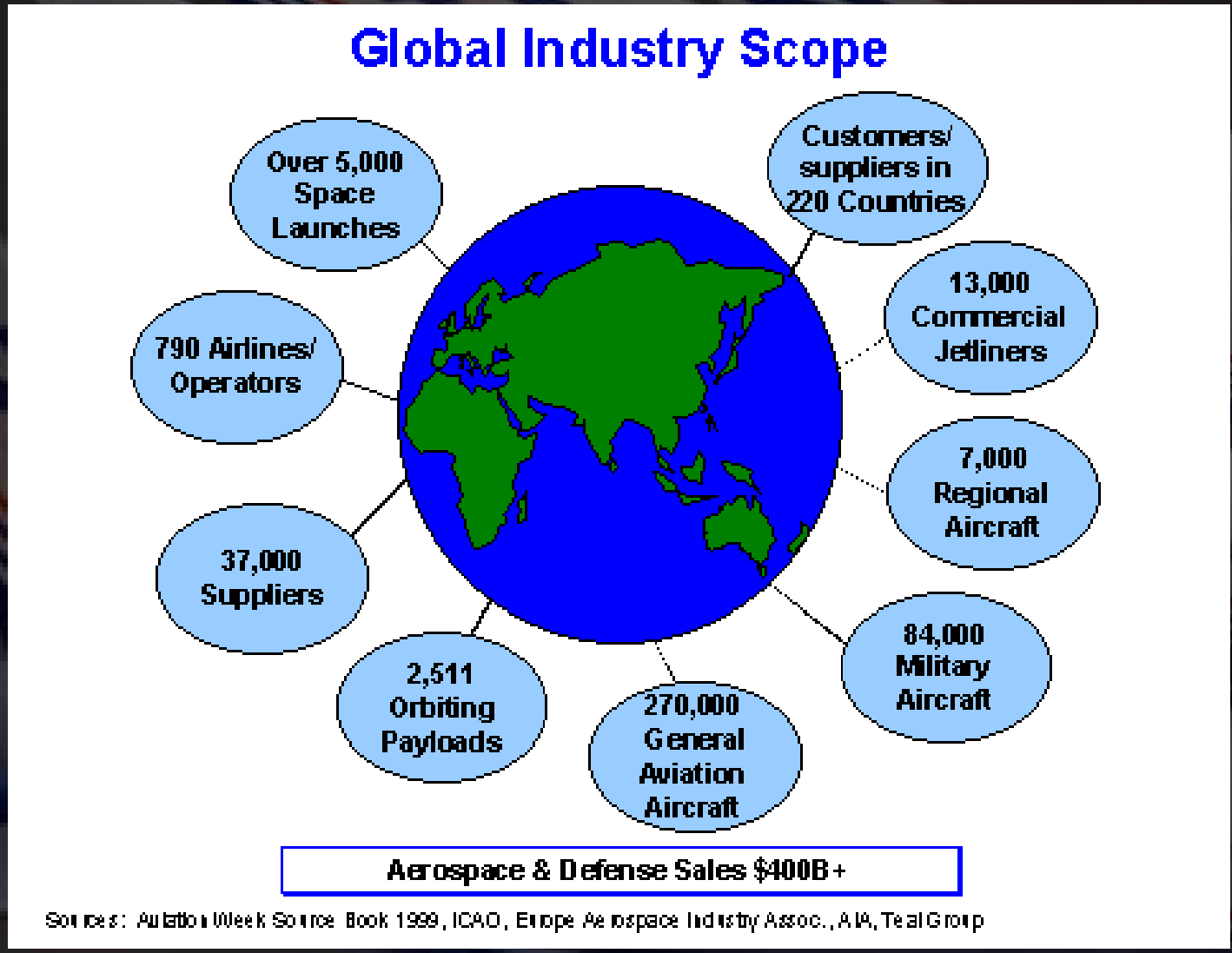

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E-business Everywhere

- **Boeing, Lockheed Martin, BAE SYSTEMS and Raytheon to Create B2B Exchange for the Aerospace and Defense Industry (3/28/00)**
- **Boeing Launches New E-Business Web Site For Airline Customers (5/9/00)**
- **In 1999, Boeing PART page had more than $400 million in on-line sales by more than 250 airlines and about 675 other companies.**

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The Role of Product Data in E-business

Product data is critical to knowing:

- **it is the right part:**
- **it is an approved configuration**
- **it is from a approved manufacturer**
- **it fits**
- **how to make it**
- **how to maintain it**

And much more

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STEP and XML Together

- STEP = Industry consensus for product data representation and semantics.
  - STEP lacks widespread infrastructure
- XML = Pervasive, low cost technology rapidly becoming basis for E-business.
  - XML lacks standards for content semantics
- STEP + XML = Best of both worlds

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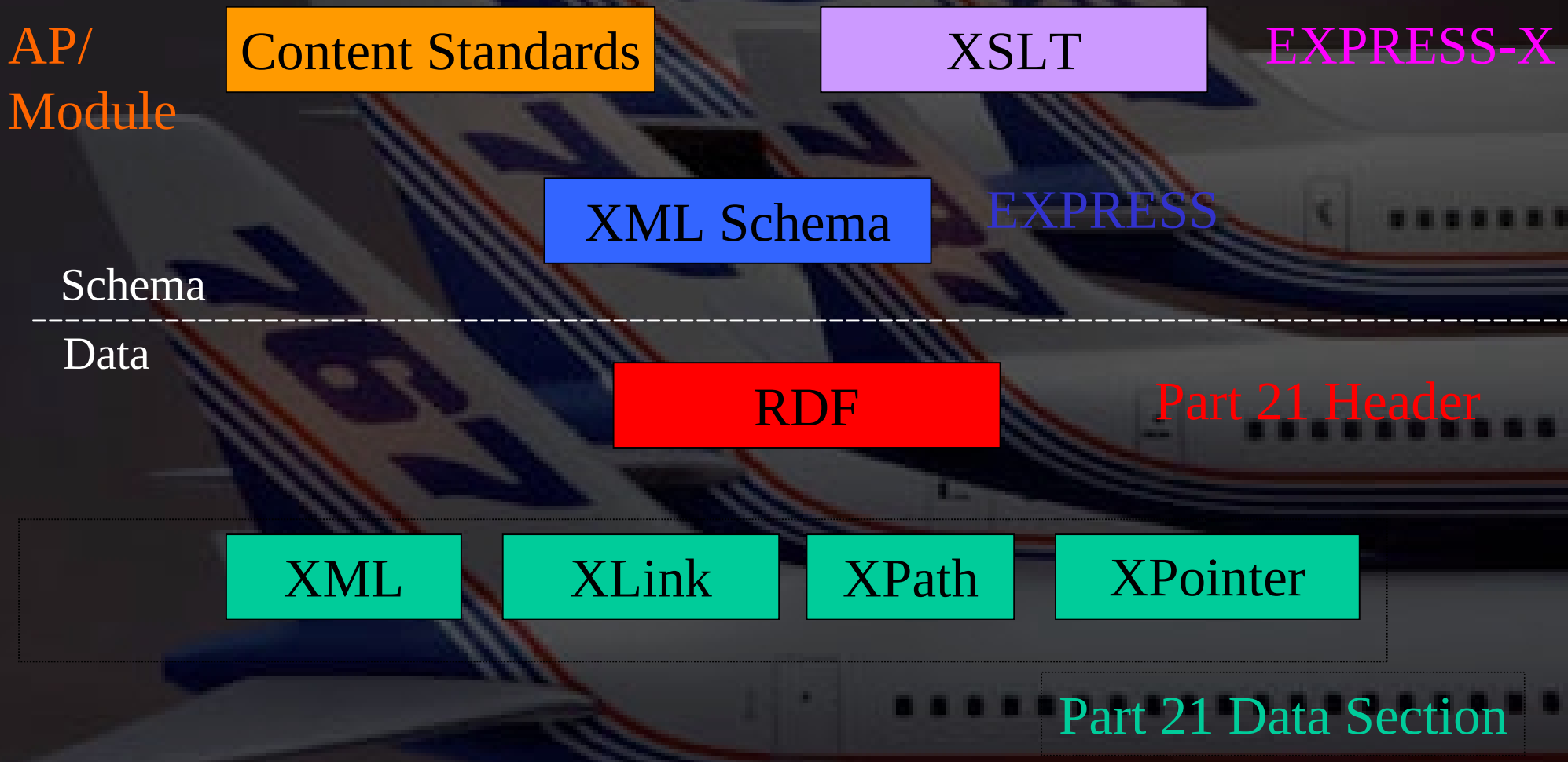
W3C Architecture and its relationship to STEP



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Web vs. Traditional File Exchange

- **File Exchange:**
  - **Files pushed (duplicated)**
  - **Multiple data management system**
  - **Configuration control issues**
  - **Sporadic communication**
- **Web:**
  - **Data pulled as needed (when and how much)**
  - **Access via single data management source**
  - **Continuous communication**

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Design Collaboration

- Rapid communication is key
  - Change notification
  - Negotiation
- The right data is critical
  - configuration management

==> Web based access to up to date design data

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Supply Chain Management

- Small supplier has limited computing resources ==> Web based solutions
- Business and technical data
  - Design data combined with purchasing, inventory, scheduling, etc.
- Drastic reduction in transaction costs

STEP and XML activities

- STEP Part 28 (In Development)
  - Defines bindings of EXPRESS language and schemas onto XML Document Type Definitions (DTD's) and OMG XMI format
- PDES Inc. working to convert content standards
- Numerous implementation pilot projects in work

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Issues

- Proliferation of XML content "standards"
- Technical alignment of STEP and XML technologies
- How will XML based standard schemas be harmonized/integrated?
  - STEP/XML
  - EDI/XML

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Questions?
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